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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,262

09/27/2005

John Mak

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EXAMINER

WU, IVES J

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

02/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,262	<b>Applicant(s)</b> MAK ET AL.	
	<b>Examiner</b> IVES WU	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/20/2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-6 and 10-20 is/are allowed.
- 6) ☒ Claim(s) 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

- (1). Applicants' Amendments and Remarks filed on 11/20/2008 have been received.  
Claims 1 and 3 are amended. Claim 2 is cancelled.

The rejection of claim 1 in prior Office Action dated 08/29/2008 is withdrawn accordingly.

The indicated allowability of claim 7 is withdrawn in view of the newly discovered reference(s) to Zeller et al (US 4425317). Rejections based on the newly cited reference(s) follow.

#### *Claim Rejections - 35 USC § 102*

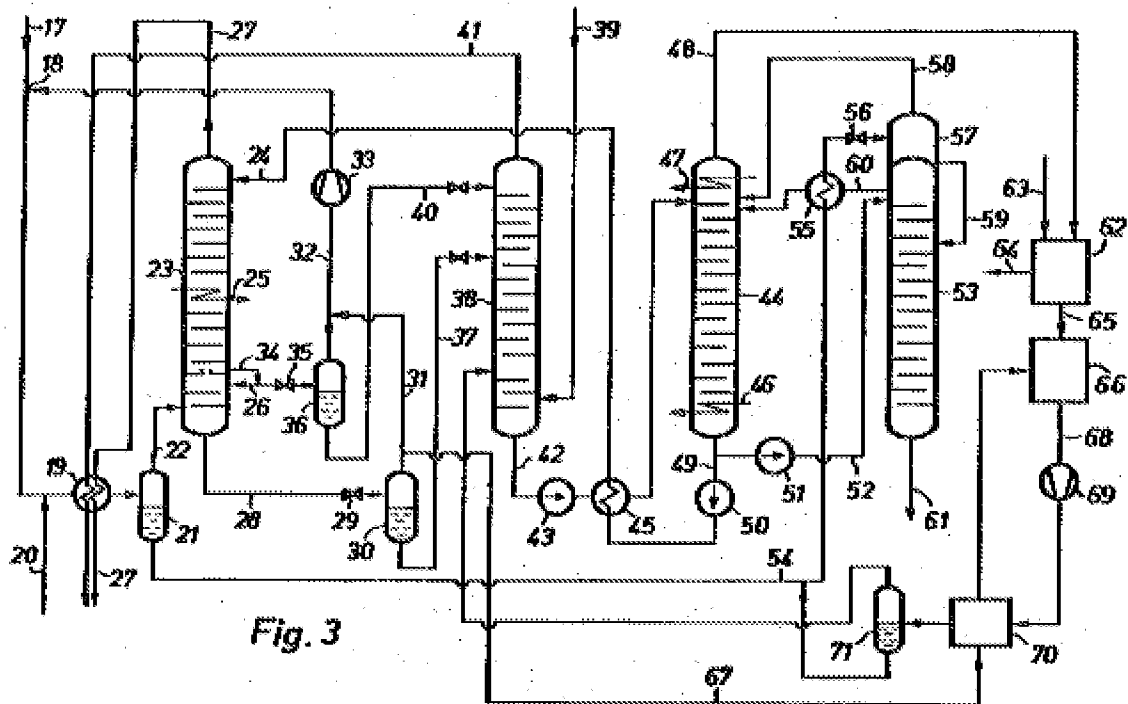
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- (2). **Claims 7-9** are rejected under 35 U.S.C. 102(b) as being anticipated by Zeller et al (US 4425317).

As to an absorber that is configured to receive (a) a feed gas comprising carbon dioxide and hydrogen sulfide, (b) a carbon dioxide saturated lean solvent, and (c) wherein the absorber is further configured to produce an overhead vapor comprising at least a portion of the carbon dioxide in **independent claim 7**, Zeller et al (US 4425317) disclose recycle of hydrogenated sulfur plant tail gas to sour gas scrubbing system (Title). It is shown in the Figure below:



Separator 38 as shown in the Figure above, has input line 40 as recited: To prevent hydrogen sulfide from escaping at the top of the hydrogen-sulfide enrichment column, carbon-dioxide loaded methanol from separator 36 is introduced through the line 40 at the top of the column 38 (Col. 7, line 16-20), input line from separator 71 as recited: the dewatered hydrogen tail gas is then fed into the lower section of the hydrogen-sulfide enrichment stage 38. Conversely, the sulfur compounds contained in the hydrogenated tail gas (almost solely of hydrogen sulfide) are scrubbed in the tower 38 by means of a countercurrent stream of partially saturated methanol (Col. 8, line 45-55), overhead output line 41 as recited: This incompletely saturated methanol acts as a scrubbing agent for the stripped-out hydrogen sulfide, whereby a sulfur-free stream of gas is removed from the column 38 thru the line 41, this stream consisting essentially of only carbon dioxide and nitrogen and being suitable for discharge into the environment after being heated by the gas stream to be purified in the heat exchanger 19 (Col. 7, line 20-27).

As to the a lean solvent to be combined with the overhead vapor and cooled to form the carbon dioxide saturated lean solvent, thereby increasing selective absorption of the hydrogen sulfide from the feed gas in the lean solvent in a gas treatment in **independent claim 7**, it is noticed that the limitation is product-by-process, examiner rejected product-by-process claims over a product, although prepared in a different manner, appeared to be the same (*prima facie*) as the claimed product. *In re Thorpe*, 227 USPQ 964 (CAFC 1985).

As to a bottom product being reduced in pressure and heated to a temperature sufficient to desorb the carbon dioxide from the bottom product in **claim 8**, Zeller et al (US 4425317) disclose methanol containing all of the hydrogen separated from the gas flow and possibly also the carbonyl sulfide in this gas stream and part of the scrubbed carbon dioxide collects in the sump of the hydrogen-sulfide enrichment column 38 (Col. 7, line 28-32). It would be reduced in pressure because the carbon dioxide is stripped and stripping nitrogen gas with increased temperature in absorption of hydrogen sulfide.

As to at least a portion of the hydrogen sulfide in the desorbed carbon dioxide to be absorbed in a 2<sup>nd</sup> absorber using a portion of the carbon dioxide saturated lean solvent in **claim 9**, Zeller et al (US 4425317) disclose this incompletely saturated methanol acting as a scrubbing agent for the stripped-out hydrogen sulfide, whereby a sulfur-free stream of gas to be removed from the column 38 through the line 41 (Col. 7, line 20-24).

#### ***Allowable Subject Matter***

(3). **Claims 1, 3-6, 10-20** are allowed.

The following is an examiner's statement of reasons for allowance: The lean solvent saturated with carbon dioxide for the two scrubbers and a common regenerator in direct fluid communication with all absorbers overcomes the prior art as to this day of Allowability.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1797

Date: January 30, 2009

/DUANE SMITH/  
Supervisory Patent Examiner, Art Unit 1797